

## CLAIMS

1. A process for the recovery of at least one rare gas selected from the group consisting of krypton and xenon from a mixture comprising oxygen and at least one rare gas selected from the group consisting of krypton and xenon, said process  
5 comprising:

separating feed air in a cryogenic air separation unit ("ASU") into nitrogen -rich overhead vapor and liquid oxygen ("LOX");

pressurising at least a portion of said LOX to provide pressurized LOX;

at least partially vaporizing at least a portion of said pressurized LOX to provide  
10 said mixture such that at least about 50 mol % of said mixture is in the gaseous phase;

feeding said mixture or a mixture derived therefrom at a pressure greater than the pressure of the part of the ASU producing said LOX to a rare gas recovery system; and

separating said mixture feed in said rare gas recovery system into rare gas-lean gaseous oxygen ("GOX") and rare gas-enriched product, provided that, when said  
15 mixture feed is separated by selective adsorption, the concentration of xenon in the mixture feed is no greater than 50 times the concentration of xenon in air,

wherein the rare gas recovery system is an adsorber system, said process comprising contacting said mixture feed with rare gas selective adsorbent material in the adsorber system to effect the separation.

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2. The process according to Claim 1 wherein the process is selected from the group consisting of a pressure swing adsorption ("PSA") process or a temperature swing adsorption ("TSA") process.

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